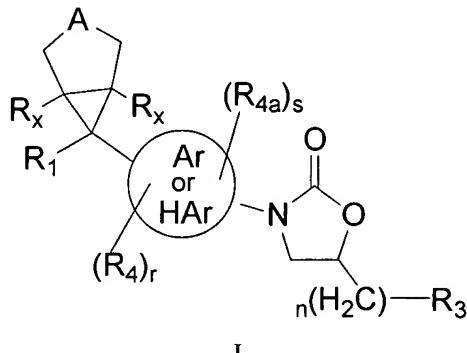


IN THE CLAIMS

A listing of the claims presented in this patent application appears below. This listing replaces all prior versions and listing of claims in this patent application.

1. (Currently Amended) The present invention relates to compounds of formula I:



I

its enantiomer, diastereomer, or pharmaceutically acceptable salt, hydrate or prodrug thereof wherein:

R₁ represents

- i) hydrogen,
- ii) NR₅R₆,
- iii) CR₇R₈R₉, C(R)₂OR₁₄, CH₂NHR₁₄,
- iv) C(=O)R₁₃, C(=NOH)H, C(=NOR₁₃)H, C(=NOR₁₃)R₁₃, C(=NOH)R₁₃, C(=O)N(R₁₃)₂, C(=NOH)N(R₁₃)₂, NHC(=X₁)N(R₁₃)₂, (C=NH)R₇, N(R₁₃)C(=X₁)N(R₁₃)₂, COOR₁₃, SO₂R₁₄, N(R₁₃)SO₂R₁₄, N(R₁₃)COR₁₄,
- v) (C₁₋₆alkyl)CN, CN, CH=C(R)₂, (CH₂)_pOH, C(=O)CHR₁₃, C(=NR₁₃)R₁₃, NR₁₀C(=X₁)R₁₃; or
- vi) C₅₋₁₀ heterocycle optionally substituted with 1-3 groups of R₇, which may be attached through either a carbon or a heteroatom;

A represents NR, O, or S(O)p;

Ar
or
HAr

represents aryl or heteroaryl, ~~heterocycle, heterocycll or heterocyclic, provided that in the case of a heteroaryl, heterocycle, heterocycll or heterocyclic, provided that in the case of a heteroaryl, a cyclopropyl is not attached to a nitrogen atom on the ring;~~

R_x represents hydrogen or C₁₋₆ alkyl;

R₃ represent

- i) NR₁₃(C=X₂)R₁₂,
- ii) NR₁₃(C=X₁)R₁₂,
- iii) NR₁₃SO₂R₁₄,
- iv) N(R₁₃)heteroaryl,
- v) NR₁₃(CHR₁₃)₀₋₄aryl,
- vi) NR₁₃(CHR₁₃)₀₋₄heteroaryl,
- vii) S(CHR₁₃)₀₋₄aryl,
- viii) S(CHR₁₃)₀₋₄heteroaryl,
- ix) O(CHR₁₃)₀₋₄aryl,
- x) O(CHR₁₃)₀₋₄heteroaryl,
- xi) NOH(C=X₁)R₁₂,
- xii) -OC=N(OCOaryl) C₁₋₆ alkyl
- xiii) -OC=N(OH) C₁₋₆ alkyl
- xiv) C₅₋₁₀ heteroaryl which may be attached through either a carbon or a heteroatom; said aryl and heteroaryl optionally substituted with 1-3 groups of R₇,

R₄, and R_{4a}, independently represent

- i) hydrogen,
- ii) halogen,
- iii) C₁₋₆ alkoxy, or
- iv) C₁₋₆ alkyl

r and s independently are 1-3, with the provision that when (R_{4a})_s and (R₄)_r are attached to an Ar or HAr ring the sum of r and s is less than or equal to 4;

R₅ and R₆ independently represent

- i) hydrogen,
- ii) C₁₋₆ alkyl optionally substituted with 1-3 groups of halogen, CN, OH, C₁₋₆ alkoxy, amino, imino, hydroxyamino, alkoxyamino, C₁₋₆ acyloxy, C₁₋₆ alkylsulfonyl, C₁₋₆ alkylsulfinyl, C₁₋₆ alkylsulfonyl, aminosulfonyl, C₁₋₆ alkylaminosulfonyl, C₁₋₆ dialkylaminosulfonyl, 4-morpholinylsulfonyl, phenyl, pyridine, 5-isoxazolyl, ethylenyloxy, or ethynyl, said phenyl and pyridine optionally substituted with 1-3 halogen, CN, OH, CF₃, C₁₋₆ alkyl or C₁₋₆ alkoxy;
- iii) C₁₋₆ acyl optionally substituted with 1-3 groups of halogen, OH, SH, C₁₋₆ alkoxy, naphthalenoxy, phenoxy, amino, C₁₋₆ acylamino, hydroxylamino, alkoxyamino, C₁₋₆ acyloxy, aralkyloxy, phenyl, pyridine, C₁₋₆ alkylcarbonyl, C₁₋₆ alkylamino, C₁₋₆ dialkylamino, C₁₋₆ hydroxyacyloxy, C₁₋₆ alkylsulfonyl, phthalimido, maleimido, succinimido, said phenoxy, phenyl and pyridine optionally substituted with 1-3 groups of halo, OH, CN, C₁₋₆ alkoxy, amino, C₁₋₆ acylamino, CF₃ or C₁₋₆ alkyl;
- iv) C₁₋₆ alkylsulfonyl optionally substituted with 1-3 groups of halogen, OH, C₁₋₆ alkoxy, amino, hydroxylamino, alkoxyamino, C₁₋₆ acyloxy, or phenyl; said phenyl optionally substituted with 1-3 groups of halo, OH, C₁₋₆ alkoxy, amino, C₁₋₆ acylamino, CF₃ or C₁₋₆ alkyl;
- v) arylsulfonyl optionally substituted with 1-3 of halogen, C₁₋₆ alkoxy, OH or C₁₋₆ alkyl;
- vi) C₁₋₆ alkoxycarbonyl optionally substituted with 1-3 of halogen, OH, C₁₋₆ alkoxy, C₁₋₆ acyloxy, or phenyl, said phenyl optionally substituted with 1-3 groups of halo, OH, C₁₋₆ alkoxy, amino, C₁₋₆ acylamino, CF₃ or C₁₋₆ alkyl;
- vii) aminocarbonyl, C₁₋₆ alkylaminocarbonyl or C₁₋₆ dialkylaminocarbonyl, said alkyl groups optionally substituted with 1-3 groups of halogen, OH, C₁₋₆ alkoxy or phenyl
- viii) five to six membered heterocycles optionally substituted with 1-3 groups of halogen, OH, CN, amino, C₁₋₆ acylamino, C₁₋₆ alkylsulfonylamino, C₁₋₆ alkoxycarbonylamino, C₁₋₆ alkoxy, C₁₋₆ acyloxy or C₁₋₆ alkyl, said alkyl optionally substituted with 1-3 groups of halogen, or C₁₋₆ alkoxy;
- ix) C₃₋₆ cycloalkylcarbonyl optionally substituted with 1-3 groups of halogen, OH, C₁₋₆ alkoxy or CN;
- x) benzoyl optionally substituted with 1-3 groups of halogen, OH, C₁₋₆ alkoxy, C₁₋₆ alkyl, CF₃, C₁₋₆ alkanoyl, amino or C₁₋₆ acylamino;
- xi) pyrrolylcarbonyl optionally substituted with 1-3 of C₁₋₆ alkyl;

xiii) C₁₋₂ acyloxyacetyl where the acyl is optionally substituted with amino, C₁₋₆ alkylamino, C₁₋₆ dialkylamino, 4-morpholino, 4-aminophenyl, 4-(dialkylamino)phenyl, 4-(glycylamino)phenyl; or R₅ and R₆ taken together with any intervening atoms can form a 3 to 7 membered heterocyclic ring containing carbon atoms and 1-2 heteroatoms independently chosen from O, S, SO, SO₂, N, or NR₈;

R₇ represent

- i) hydrogen, halogen, CN, CO₂R, CON(R)₂, CHO, CH₂NHAc, C(=NOR), OH, C₁₋₆ alkoxy, C₁₋₆ alkyl, alkenyl, hydroxy C₁₋₆ alkyl, (CH₂)₁₋₃NHC(O)C₁₋₆ alkyl, (CH₂)₁₋₃N(C₁₋₆ alkyl)₂
- ii) (CH₂)_namino, (CH₂)_nC₁₋₆ alkylamino, C₁₋₆ dialkylamino, hydroxylamino or C₁₋₂ alkoxyamino all of which can be optionally substituted on the nitrogen with C₁₋₆ acyl, C₁₋₆ alkylsulfonyl or C₁₋₆ alkoxy carbonyl, said acyl and alkylsulfonyl optionally substituted with 1-2 of halogen or OH;

R₈ and R₉ independently represents

- i) H, CN,
- ii) C₁₋₆ alkyl optionally substituted with 1-3 halogen, CN, OH, C₁₋₆ alkoxy, C₁₋₆ acyloxy, or amino,
- iii) phenyl optionally substituted with 1-3 groups of halogen, OH, C₁₋₆ alkoxy; or

R₇ and R₈ taken together can form a 3-7 membered carbon ring optionally interrupted with 1-2 heteroatoms chosen from O, S, SO, SO₂, NH, and NR₈;

X₁ represents O, S or NR₁₃, NCN, NCO₂R₁₆, or NSO₂R₁₄

X₂ represents O, S, NH or NSO₂R₁₄;

R₁₀ represents hydrogen, C₁₋₆ alkyl or CO₂R₁₅;

R₁₂ represents hydrogen, C₁₋₆ alkyl, NH₂, OR, CHF₂, CHCl₂, CR₂Cl, (CH₂)_nSR, (CH₂)_nCN, (CH₂)_nSO₂R, (CH₂)_nS(O)R, C₁₋₆ alkylamino, C₅₋₁₀ heteroaryl or C₁₋₆ dialkylamino, where said alkyl may be substituted with 1-3 groups of halo, CN, OH or C₁₋₆ alkoxy, said heteroaryl optionally substituted with 1-3 groups of R₇;

Each R₁₃ represents independently hydrogen, C₁₋₆ alkyl, C₆₋₁₀ aryl, NR₅R₆, SR₈, S(O)R₈, S(O)₂R₈, CN, OH, C₁₋₆ alkylS(O)R, C₁₋₆ alkoxy carbonyl, hydroxycarbonyl, -OCOaryl, C₁₋₆ acyl, C₃₋₇

membered carbon ring optionally interrupted with 1-4 heteroatoms chosen from O, S, SO, SO₂, NH and NR₈ where said C₁₋₆ alkyl, aryl or C₁₋₆ acyl groups may be independently substituted with 0-3 halogens, hydroxy, N(R)₂, CO₂R, C₆₋₁₀ aryl, C₅₋₁₀ heteroaryl, or C₁₋₆ alkoxy groups;

When two R₁₃ groups are attached to the same atom or two adjacent atoms they may be taken together to form a 3-7 membered carbon ring optionally interrupted with 1-2 heteroatoms chosen from O, S, SO, SO₂, NH, and NR₈;

R represents hydrogen or C₁₋₆ alkyl;

R₁₄ represents amino, C₁₋₆ alkyl, C₁₋₆ haloalkyl, five to six membered heterocycles or phenyl, said phenyl and heterocycles optionally substituted with 1-3 group of halo, C₁₋₆ alkoxy, C₁₋₆ acylamino, or C₁₋₆ alkyl, hydroxy and/or amino, said amino and hydroxy optionally protected with an amino or hydroxy protecting group;

R₁₅ is C₁₋₆ alkyl or benzyl said benzyl optionally substituted with 1-3 groups of halo, OH, C₁₋₆ alkoxy, amino, C₁₋₆ acylamino, or C₁₋₆ alkyl;

R₁₆ is hydrogen, C₅₋₁₀ heteroaryl, C₆₋₁₀ aryl, said heteroaryl and aryl optionally substituted with 1-3 groups of R₇;

p represents 0-2 and

m, n, and q represents 0-1.

2. (Original) A compound according to claim 1 wherein R₁ represents H, NR₅R₆, CN, OH, C(R)₂OR₁₄, NHC(=X₁)N(R₁₃)₂, C(=NOH)N(R₁₃)₂, NR₁₀C(=X₁)R₁₃ or CR₇R₈R₉.

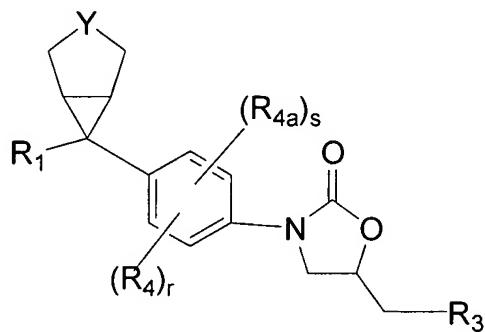
Ar
or
HAr

3. (Original) A compound according to claim 1 wherein
is phenyl, pyridine, pyrimidine, or piperidine.

4. (Original) A compound according to claim 3 wherein R₁ is NR₅R₆, or CN and R₃ is NR₁₀C(=X₁)R₁₃, NR(C=X₁)R₁₂, C₅₋₁₀ heteroaryl, NH(CH₂)₀₋₄aryl, NH(CH₂)₀₋₄heteroaryl, said aryl and heteroaryl optionally substituted with 1-3 groups of Ra .

5. (Original) A compound according to claim 3 wherein R₃ is a C₅-10 heteroaryl represented by  which represents an optionally substituted aromatic heterocyclic group containing 1 to 4 nitrogen atoms and at least one double bond, and which is connected through a bond on any nitrogen.

6. (Original) A compound according to claim 1 wherein the structural formula is II:



Formula II

wherein R₁, R₄, R_{4a}, Y and R₃ are as described above.

7. (Original) A compound which is:

N-[5(S)-3-[4-[(1 α ,5 α ,6 β)-(6-cyanobicyclo[3.1.0]hexan-6-yl)]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,
1-[5(R)-3-[4-[(1 α ,5 α ,6 β)-(6-cyanobicyclo[3.1.0]hexan-6-yl)]phenyl]-2-oxooxazolidin-5-ylmethyl]-1,2,3-triazole,
N-[5(S)-3-[4-[(1 α ,5 α ,6 β)-(3-t-butoxycarbonyl-6-cyano-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,
N-[5(S)-3-[4-[(1 α ,5 α ,6 β)-(6-cyano-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide ,
1-[5(R)-3-[4-[(1 α ,5 α ,6 β)-(3-t-butoxycarbonyl-6-cyano-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-2-oxooxazolidin-5-ylmethyl]-1,2,3-triazole,
1-[5(R)-3-[4-[(1 α ,5 α ,6 β)-(6-cyano-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-2-oxooxazolidin-5-ylmethyl]-1,2,3-triazole ,

N-[5(S)-3-[4-[(1 α ,5 α ,6 β)-(3-acetoxyacetyl-6-cyano-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1 α ,5 α ,6 β)-(6-cyano-3-hydroxyacetyl-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1 α ,5 α ,6 β)-(6-cyano-3-methanesulfonyl-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1 α ,5 α ,6 β)-(6-cyano-3-methyl-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1 α ,5 α ,6 β)-(3,6-dicyano-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1 α ,5 α ,6 β)-(6-cyano-3-cyanomethyl-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

5(R)-3-[4-[(1 α ,5 α ,6 β)-(3-t-butoxycarbonyl-6-cyano-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-5-[(isoxazol-3-yl)oxy]methyloxazolidin-2-one,

5(R)-3-[4-[(1 α ,5 α ,6 β)-(6-cyano-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-5-[(isoxazol-3-yl)oxy]methyloxazolidin-2-one ,

5(R)-3-[4-[(1 α ,5 α ,6 β)-(3-t-butoxycarbonyl-6-cyano-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-5-[N-(t-butoxycarbonyl)-N-(isoxazol-3-yl)]aminomethyloxazolidin-2-one,

5(R)-3-[4-[(1 α ,5 α ,6 β)-(6-cyano-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-5-[N-(isoxazol-3-yl)]aminomethyloxazolidin-2-one,

N-[5(S)-3-[4-[(1 α ,5 α ,6 β)-[6-cyano-3-(5-cyanopyridin-2-yl)-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1 α ,5 α ,6 β)-[6-cyano-3-(pyridin-2-yl)-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1 α ,5 α ,6 β)-[3-acetyl-6-cyano-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1 α ,5 α ,6 β)-[6-cyano-3-(pyrimidin-2-yl)-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1 α ,5 α ,6 β)-[6-cyano-3-(4-pyridylmethyl)-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1 α ,5 α ,6 β)-[6-cyano-3-(N-cyano-1-iminoethyl)-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1 α ,5 α ,6 β)-[6-cyano-3-methoxycarbonyl-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1 α ,5 α ,6 β)-[6-cyano-3-(N-cyano-S-methylthioiminomethyl)-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1 α ,5 α ,6 β)-[6-cyano-3-(N-cyanocarboxamidyl)-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1 α ,5 α ,6 β)-[3-(N,N'-t-butoxycarbonylcarboxamidyl)-6-cyano-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1 α ,5 α ,6 β)-[3-carboxamidyl-6-cyano-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1 α ,5 α ,6 β)-[3-(N-t-Butoxycarbonylamino)acetyl-6-cyano-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1 α ,5 α ,6 β)-[3-aminoacetyl-6-cyano-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1 α ,5 α ,6 β)-[6-cyano-3-methanesulfonylacetyl-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1 α ,5 α ,6 β)-[6-cyano-3-(dibenzylphosphoryloxy)acetyl-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1 α ,5 α ,6 β)-[6-cyano-3-(phosphoryloxy)acetyl-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

or their enantiomer, diastereomer, or pharmaceutically acceptable salt, hydrate or prodrug thereof wherein.

8. (Original) A pharmaceutical composition comprised of a compound in accordance with claim 1 in combination with a pharmaceutically acceptable carrier and optionally a in combination with a vitamin selected from the group consisting vitamin B2, vitamin B6, vitamin B12 and folic acid.

9. (Original) A method of treating or preventing a bacterial infection in a mammalian patient in need thereof, comprising administering to said patient an effective amount of a compound of claim 1.

10. (Original) A method of treating or preventing bacterial infection or an oxazolidinone-associated side effect by administering an effective amount of a compound of

formula I of claim 1 and an effective amount of one or more of a vitamin selected from the group consisting of vitamin B2, vitamin B6, vitamin B12 and folic acid to a patient in need thereof.

11. (Currently Amended) A method according to ~~claim 16~~ claim 1 for treating or preventing oxazolidinone-associated normocytic anemia, peripheral sensory neuropathy, sideroblastic anemia, peripheral sensory neuropathy, optic neuropathy, seizures, thrombocytopenia, cheilosis, hypo-regenerative anemia, megaloblastic anemia and seborrheic dermatitis by administering an effective amount of vitamin B2 to a patient in need thereof.